

Use Attainability Analysis

for

WBID 0377 Brushy Creek

Submitted by
SES Inc.

to

Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	brushy creek
Missouri Water Body Identification (WBID) Number:	377
8 digit HUC code: 10300101	County: clay
Upstream Legal Description (from Table H):	T54N R29W SEC 18
Downstream Legal Description (from Table H):	T55N R29W SEC 33
Number of sites evaluated:	4
List all site numbers, listed consequently upstream to downstream: 4, 3, 2, 1	

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

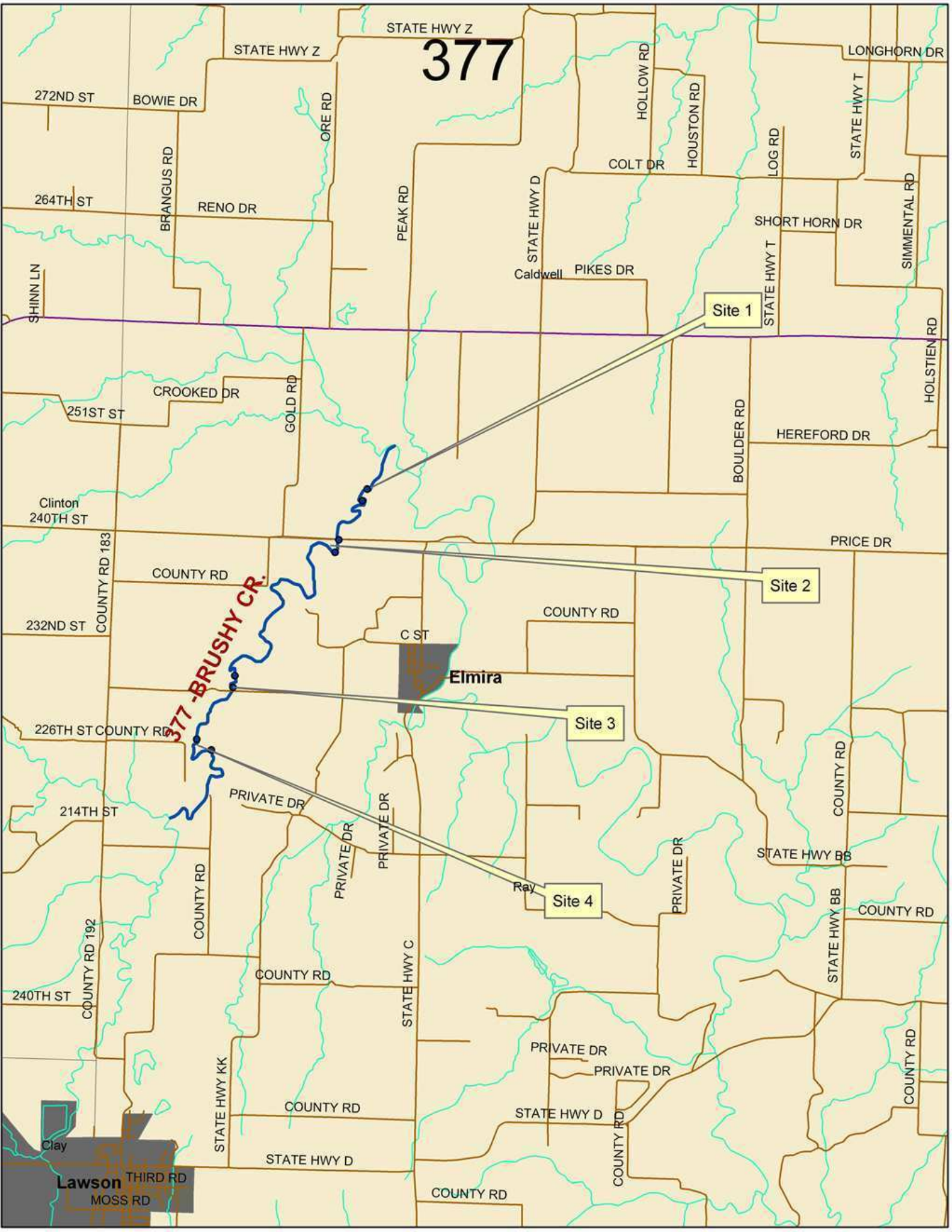
Facility Name(s) and Permit Number(s): Lawson Wastewater lagoon MO0091031

III. UAA Surveyor (please print legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 913-307-0054
Organization/Employer: SES, Inc.	

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: _____ **Gilisa Gould** _____ **Date:** _____ **11.09.07** _____



WBID # 377
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.15.07 10:00am	Site Location Description (e.g. road crossing):
Personnel: L. Brown & G. Gould	Price dr.
Current Weather Conditions: clear	Facility Name: Lawson Wastewater Lagoon
Weather conditions for the past 10 days: 0.96 inches	Permit Number: MO0091031
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0399895	4376429	30 ft		
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0399972	4376605	20 ft		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
70	downstream, T1	71	upstream, T1	72	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
73	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 377
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input checked="" type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: platform in trees possibly for hunting				

Substrate:

% Cobble	% Gravel	% Sand 70	% Silt 10	% Mud/Clay 10	% Bedrock 10
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # _____ 377 _____
Site # _____ 1 _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Gilisa Gould _____ Date of Survey: _____ 10.15.07 _____

Organization: _____ SES, Inc. _____ Position: _____ Field Team Leader _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>377</u> Site #: <u>1</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0399895</u> UTM Y: <u>4376429</u> +/- <u>9.1</u> (meters) 11 UTM X: <u>0399972</u> UTM Y: <u>4376605</u> +/- <u>6</u> (meters) Average Stream Width: <u>5</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.15.07</u> Time: <u>10:00am</u> Dissolved Oxygen: <u>9.4</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.8</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.4	0.10	0.7	0.03	0.5	0.05	0.6	0.05	0.6	0.25	0.6	0.05	0.2	0.05	0.6	0.01	0.4	0.05	0.4	0.05	0.5	0.01
2	0.8	0.30	1.4	0.80	1.0	0.15	1.2	0.20	1.2	0.35	1.2	0.15	0.4	0.15	1.2	0.10	0.8	0.25	0.8	0.05	1.0	0.15
3	1.2	0.50	2.1	1.00	1.5	0.35	1.8	0.15	1.8	0.40	1.8	0.25	0.6	0.05	1.8	0.10	1.2	0.30	1.2	0.20	1.5	0.15
4	1.6	0.50	2.8	0.95	2.0	0.50	2.4	0.01	2.4	0.25	2.4	0.30	0.8	0.00	2.4	0.15	1.6	0.20	1.6	0.30	2.0	0.20
5	2.0	0.40	3.5	0.75	2.5	0.55	3.0	0.05	3.0	0.25	3.0	0.45	1.0	0.00	3.0	0.15	2.0	0.15	2.0	0.20	2.5	0.15
6	2.4	0.30	4.2	0.50	3.0	0.35	3.6	0.15	3.6	0.20	3.6	0.55	1.2	0.01	3.6	0.20	2.4	0.15	2.4	0.10	3.0	0.10
7	2.8	0.25	4.9	0.50	3.5	0.20	4.2	0.20	4.2	0.40	4.2	0.45	1.4	0.05	4.2	0.20	2.8	0.15	2.8	0.10	3.5	0.05
8	3.2	0.20	5.6	0.40	4.0	0.10	4.8	0.40	4.8	0.25	4.8	0.30	1.6	0.05	4.8	0.45	3.2	0.15	3.2	0.10	4.0	0.05
9	3.6	0.15	6.3	0.15	4.5	0.01	5.4	0.30	5.4	0.05	5.4	0.15	1.8	0.05	5.4	0.30	3.6	0.05	3.6	0.05	4.5	0.01
Right Bank	4.0	0.00	7.0	0.00	5.0	0.00	6.0	0.00	6.0	0.00	6.0	0.00	2.0	0.00	6.0	0.00	4.0	0.00	4.0	0.00	5.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		riffle		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Gilisa Gould Date: 11.09.07

WBID # 377
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.15.07 11:05am	Site Location Description (e.g. road crossing):
Personnel: L. Brown & G. Gould	upstream of prince rd crossing
Current Weather Conditions: clear	Facility Name: Lawson Wastewater Lagoon
Weather conditions for the past 10 days: 3.09 inches	Permit Number: MO0091031
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0399482	4375645	22 ft
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0399534	4375839	24 ft

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
74	downstream, T1	75	upstream, T1	76	downstream, T11, fence
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
77	upstream, T11	78	underbridge art	79	trash under bridge
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 377
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: crosses riffle				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: <div style="text-align: center;">none</div>				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
	10	80			10

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # _____ 377 _____
Site # _____ 2 _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Gilisa Gould _____ Date of Survey: _____ 10.15.07 _____

Organization: _____ SES, Inc. _____ Position: _____ Field Team Leader _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>377</u> Site #: <u>2</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0399482</u> UTM Y: <u>4375645</u> +/- <u>6.7</u> (meters) 11 UTM X: <u>0399534</u> UTM Y: <u>4375839</u> +/- <u>7.3</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>														Dissolved Oxygen Date: <u>10.15.07</u> Time: <u>11:05</u> Dissolved Oxygen: <u>8.7</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>14.2</u> (°C)								
Transect Cross-Section																						
Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.10	0.5	0.05	0.7	0.01	0.7	0.10	1.0	0.05	0.4	0.15	0.8	0.05	0.4	0.01	0.6	0.05	0.8	0.05	0.6	0.01
2	1.0	0.35	1.0	0.10	1.4	0.10	1.4	0.10	2.0	0.10	0.8	0.10	1.6	0.05	0.8	0.05	1.2	0.10	1.6	0.15	1.2	0.01
3	1.5	0.35	1.5	0.10	2.1	0.01	2.1	0.10	3.0	0.05	1.2	0.15	2.4	0.05	1.2	0.05	1.8	0.15	2.4	0.10	1.8	0.05
4	2.0	0.30	2.0	0.10	2.8	0.00	2.8	0.10	4.0	0.15	1.6	0.15	3.2	0.05	1.6	0.05	2.4	0.10	3.2	0.05	2.4	0.05
5	2.5	0.30	2.5	0.20	3.5	0.00	3.5	0.05	5.0	0.10	2.0	0.10	4.0	0.05	2.0	0.10	3.0	0.10	4.0	0.05	3.0	0.05
6	3.0	0.20	3.0	0.25	4.2	0.05	4.2	0.10	6.0	0.00	2.4	0.10	4.8	0.10	2.4	0.15	3.6	0.05	4.8	0.05	3.6	0.00
7	3.5	0.15	3.5	0.35	4.9	0.10	4.9	0.05	7.0	0.00	2.8	0.10	5.6	0.01	2.8	0.15	4.2	0.05	5.6	0.10	4.2	0.15
8	4.0	0.10	4.0	0.35	5.6	0.10	5.6	0.05	8.0	0.00	3.2	0.05	6.4	0.05	3.2	0.15	4.8	0.00	6.4	0.05	4.8	0.10
9	4.5	0.01	4.5	0.10	6.3	0.05	6.3	0.01	9.0	0.01	3.6	0.01	7.2	0.05	3.6	0.10	5.4	0.01	7.2	0.01	5.4	0.05
Right Bank	5.0	0.00	5.0	0.00	7.0	0.00	7.0	0.00	10.0	0.00	4.0	0.00	8.0	0.00	4.0	0.00	6.0	0.00	8.0	0.00	6.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		riffle		riffle		riffle		riffle		riffle		run		pool		pool		riffle	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Gilisa Gould Date: 11.09.07

WBID # 377
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.15.07 12:50pm	Site Location Description (e.g. road crossing):
Personnel: L. Brown & G. Gould	228th county rd
Current Weather Conditions: clear	Facility Name: Lawson Wastewater Lagoon
Weather conditions for the past 10 days: 3.09 inches	Permit Number: MO0091031
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, in Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0397930	4373593	15 ft		
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0397959	4373770	24 ft		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
84	downstream, T1	85	upstream, T1	86	tire tracks, ATV
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
87	downstream, T11	88	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 377
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input checked="" type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 10	% Sand 80	% Silt	% Mud/Clay	% Bedrock 10
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # _____ 377 _____
Site # _____ 3 _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Gilisa Gould _____ Date of Survey: _____ 10.15.07 _____

Organization: _____ SES, Inc. _____ Position: _____ Field Team Leader _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>377</u> Site #: <u>3</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0397930</u> UTM Y: <u>4373593</u> +/- <u>4.5</u> (meters) 11 UTM X: <u>0397959</u> UTM Y: <u>4373770</u> +/- <u>7.3</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.15.07</u> Time: <u>12:50pm</u> Dissolved Oxygen: <u>8.4</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.3</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.05	0.6	0.01	0.3	0.05	0.5	0.05	0.7	0.10	0.5	0.05	0.5	0.05	0.4	0.01	0.9	0.05	0.2	0.05	0.2	0.05
2	1.4	0.10	1.2	0.01	0.6	0.05	1.0	0.10	1.4	0.25	1.0	0.10	1.0	0.20	0.8	0.01	1.8	0.00	0.4	0.10	0.4	0.25
3	2.1	0.05	1.8	0.05	0.9	0.20	1.5	0.05	2.1	0.40	1.5	0.35	1.5	0.25	1.2	0.05	2.7	0.00	0.6	0.15	0.6	0.40
4	2.8	0.00	2.4	0.10	1.2	0.20	2.0	0.00	2.8	0.30	2.0	0.45	2.0	0.30	1.6	0.10	3.6	0.00	0.8	0.15	0.8	0.45
5	3.5	0.00	3.0	0.10	1.5	0.10	2.5	0.00	3.5	0.20	2.5	0.50	2.5	0.35	2.0	0.10	4.5	0.00	1.0	0.15	1.0	0.30
6	4.2	0.00	3.6	0.05	1.8	0.10	3.0	0.05	4.2	0.15	3.0	0.40	3.0	0.25	2.4	0.05	5.4	0.01	1.2	0.10	1.2	0.25
7	4.9	0.00	4.2	0.05	2.1	0.15	3.5	0.10	4.9	0.10	3.5	0.30	3.5	0.25	2.8	0.05	6.3	0.00	1.4	0.05	1.4	0.15
8	5.6	0.05	4.8	0.01	2.4	0.15	4.0	0.10	5.6	0.05	4.0	0.15	4.0	0.15	3.2	0.01	7.2	0.15	1.6	0.01	1.6	0.05
9	6.3	0.01	5.4	0.01	2.7	0.05	4.5	0.01	6.3	0.01	4.5	0.05	4.5	0.05	3.6	0.05	8.1	0.05	1.8	0.01	1.8	0.01
Right Bank	7.0	0.00	6.0	0.00	3.0	0.00	5.0	0.00	7.0	0.00	5.0	0.00	5.0	0.00	4.0	0.00	9.0	0.00	2.0	0.00	2.0	0.00
Feature Type	pool		pool		pool		pool		pool		pool		pool		riffle		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Gilisa Gould Date: 11.09.07

WBID # 377
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.15.07 12:10pm	Site Location Description (e.g. road crossing):
Personnel: L. Brown & G. Gould	site near cr 226
Current Weather Conditions: clear	Facility Name: Lawson Wastewater Lagoon
Weather conditions for the past 10 days: 3.09 inches	Permit Number: MO0091031
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0397600	4372644	19 ft		
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0397381	4372802	25 ft		

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
80	downstream, T1	81	upstream, T1	82	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
83	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 377
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments:				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 60	% Sand 30	% Silt	% Mud/Clay	% Bedrock 10
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # _____ 377 _____
Site # _____ 4 _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: _____ Gilisa Gould _____ Date of Survey: _____ 10.15.07 _____

Organization: _____ SES, Inc. _____ Position: _____ Field Team Leader _____

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>377</u> Site #: <u>4</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0397600</u> UTM Y: <u>4372644</u> +/- <u>5.7</u> (meters) 11 UTM X: <u>039738</u> UTM Y: <u>4372802</u> +/- <u>7.6</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Larissa Brown and Gilisa Gould</u>	Dissolved Oxygen Date: <u>10.15.07</u> Time: <u>12:15pm</u> Dissolved Oxygen: <u>8.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>18.3</u> (°C)
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Transect Cross-Section

Station	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.8	0.01	0.6	0.05	0.3	0.05	0.8	0.10	0.7	0.01	0.8	0.50	0.8	0.10	0.6	0.01	0.2	0.01	0.5	0.01	0.8	0.15
2	1.6	0.05	1.2	0.05	0.6	0.20	1.6	0.10	1.4	0.05	1.6	0.30	1.6	0.15	1.2	0.05	0.4	0.01	1.0	0.05	1.6	0.15
3	2.4	0.05	1.8	0.05	0.9	0.15	2.4	0.05	2.1	0.15	2.4	0.30	2.4	0.10	1.8	0.05	0.6	0.05	1.5	0.10	2.4	0.20
4	3.2	0.05	2.4	0.01	1.2	0.15	3.2	0.05	2.8	0.20	3.2	0.30	3.2	0.05	2.4	0.05	0.8	0.00	2.0	0.10	3.2	0.20
5	4.0	0.01	3.0	0.10	1.5	0.10	4.0	0.05	3.5	0.25	4.0	0.20	4.0	0.00	3.0	0.10	1.0	0.10	2.5	0.10	4.0	0.10
6	4.8	0.00	3.6	0.30	1.8	0.05	4.8	0.05	4.2	0.30	4.8	0.20	4.8	0.00	3.6	0.20	1.2	0.10	3.0	0.15	4.8	0.05
7	5.6	0.01	4.2	0.25	2.1	0.05	5.6	0.10	4.9	0.25	5.6	0.05	5.6	0.01	4.2	0.20	1.4	0.05	3.5	0.20	5.6	0.15
8	6.4	0.05	4.8	0.10	2.4	0.05	6.4	0.15	5.6	0.25	6.4	0.01	6.4	0.05	4.8	0.05	1.6	0.05	4.0	0.20	6.4	0.05
9	7.2	0.05	5.4	0.05	2.7	0.01	7.2	0.30	6.3	0.05	7.2	0.01	7.2	0.05	5.4	0.01	1.8	0.01	4.5	0.15	7.2	0.01
Right Bank	8.0	0.00	6.0	0.00	3.0	0.00	8.0	0.00	7.0	0.00	8.0	0.00	8.0	0.00	6.0	0.00	2.0	0.00	5.0	0.00	8.0	0.00
Feature Type (riffle, run, or pool)	riffle		riffle		pool		pool		pool		pool		pool		pool		riffle		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: Gilisa Gould Date: 11.09.07

WBID# 0377



Site# 1 Photo ID# 70, Downstream T1



Site# 1 Photo ID# 71, Upstream T1



Site# 1 Photo ID# 72, Downstream T11



Site# 1 Photo ID# 73, Upstream T11

WBID# 0377



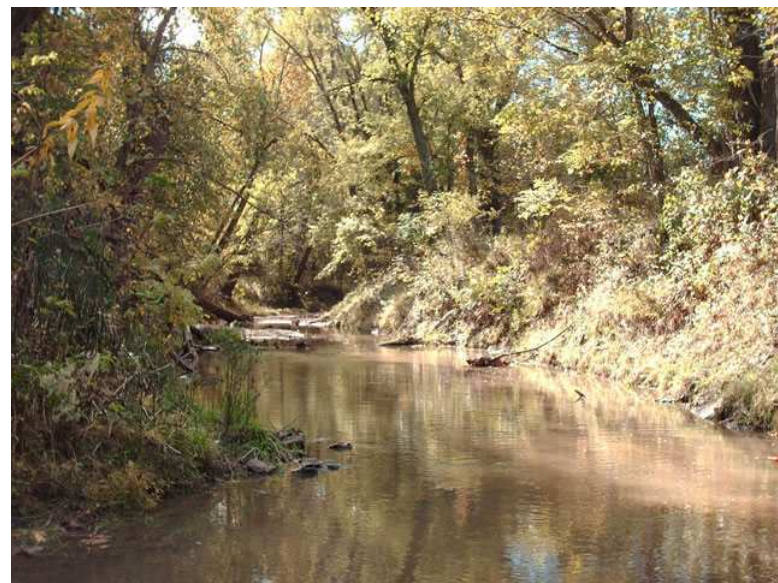
Site# 2 Photo ID# 74, Downstream T1



Site# 2 Photo ID# 75, Upstream T1



Site# 2 Photo ID# 76, Downstream T11 / fence



Site# 2 Photo ID# 77, Upstream T11

WBID# 0377



Site# 2 Photo ID# 78, Under bridge art



Site# 2 Photo ID# 79, Trash under bridge



Site# 3 Photo ID# 84, Downstream T1



Site# 3 Photo ID# 85, Upstream T1

WBID# 0377



Site# 3 Photo ID# 86, Tire tracks



Site# 3 Photo ID# 87, Downstream T11



Site# 3 Photo ID# 88, Upstream T11



Site# 4 Photo ID# 80, Downstream T1

WBID# 0377



Site# 4 Photo ID# 81, Upstream T1



Site# 4 Photo ID# 82, Downstream T11



Site# 4 Photo ID# 83, Upstream T11